DOCUMENT RESUME

ED 063 749 EM 009 909

AUTHOR Ayres, H. J.
TITLE A Review of Some Techniques Used to Study Communication Variables in Organizations.
INSTITUTION Washington State Univ., Pullman.
PUB DATE Apr 72
NOTE 12p.; Paper presented at the International Communications Association Annual Convention (Atlanta, Georgia, April 19-22, 1972)

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Communication (Thought Transfer); Measurement Instruments; *Measurement Techniques; *Organization; *Organizational Climate

ABSTRACT

An introduction to the discovery of communication as a variable in organizations is presented in this paper. The need to develop instruments adapted to gathering data on organizational communication is discussed, and a number of specific techniques that have been used for analyzing organizational communication within the framework of standard research devices are reviewed. Each of these reviews, which cover retention measures, disparity scores, readability measures, self recording methods, measures of rumor transmission, and ways of measuring network effectiveness, is followed by a brief assessment of the merits of the instrument. (Author/SH)

ED 063749

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A REVIEW OF SOME TECHNIQUES USED TO STUDY COMMUNICATION VARIABLES IN ORGANIZATIONS

By H. J. Ayres
Department of Speech
Washington State University

INTERNATIONAL COMMUNICATION ASSOCIATION
ATLANTA, GEORGIA
APRIL 19 - 22, 1972

EM 009 909

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By H. J. Ayres
Department of Speech
Washington State University
Number of pages, 9
.25 each
Division IV

This paper consists of a brief introduction to the discovery of communication as a variable in organizations. The subsequent need to develop instruments adapted to gathering data on organizational communication is discussed.

The second portion of the paper consists of a brief review of a number of specific techniques that have been used to assess communication in organizations. Retention measures, disparity scores, readibility measures, self recording methods, measures of rumor transmission, and ways of measuring network effectiveness are reviewed. Each of these reviews is followed by a brief assessment of the merits of the instrument.

H. J. Ayres
Department of Speech
Washington State University
Pullman, Washington 99163

A Review of Some Techniques Used to Study Communication Variables in Orgainzations

The consideration of communication as an important variable in organizations is a relatively recent occurance. Mayo (1945) in discussing the development of human relations theory in organizations alludes to communication as one of the important elements revealed by the Hawthorne studies. Before these studies, little emphasis was placed on communication variables in organizations.

Also, "figuring significantly in the findings of the Hawthorne studies was the impact of informal organization and thus of informal organizational communication upon worker satisfaction and plant productivity. These studies were the forerunners of much of our current activity in areas such as listening, interviewing, and counseling. Students of organizational communication set out to find more trustworthy means for analyzing the patterns of communication in organizations (Zelko and Dance, 1965, p. 126)." The focus of this paper is to review some of the instruments researchers in organizational communication have used to study communication patterns in organizations.

A number of standard research devices have been developed to study organizational communication. Keith Davis (1961) subsumed the various methods of investigating communication in organizations under five general headings:

1. Living-in (the investigator maintains a strict observational schedule of a group of subjects over an extended period of time).
2. Indirect analysis (data concerning communication is obtained

by utilizing distraction to or by re-evaluation of other studies).

3. Duty study (the investigator tabulates all the communication activities of a particular member in the organization).

4. Cross-section analysis (all the communications activities taking place at a particular time are evaluated).

5. ECCO analysis (a particular unit of information is traced through the organization).

These general methods could use content analysis, survey techniques, interviewing, etc., for gathering data. Although this is a valuable way of categorizing methods of analysis, it does not explain how the methods operate. What follows is an attempt to briefly describe specific methods of analysis.

Considerable emphasis has been placed on determining how successfully the company has conveyed information to employees about policies (downward communication). One of the basic methods utilized in such analyses was developed by Funk and Becker (1952). The basic procedure is to construct a number of multiple choice questions from material in office directives, manuals, etc. The experimenter presents the test to employees and a control group, runs an item analysis to eliminate poor questions, and analyzes the remaining questions in order to determine areas the employees seem to know little about. A nice technique for some situations but offers little help for evaluating oral communication. Some question also remains as to the importance of the information to employees. That is the selection procedure may result in the inclusion of items not important in the performance of their duties. Of course, these are limitations of the method, not criticisms.

Browne and Neitzel (1952) utilized measures of authority, responsibility, and delegation of responsibility to determine the effectiveness of company communication. Supervisors filled out one of these forms for themselves and one for their superior or subordinate. The disparity between these two measures was taken as an indication of the effectiveness of company communication practices -- the more the disparity the greater the problem. The investigators also attempted to determine the relationship between perceived authority, and morale. Incidentally perceived influence was inversely related to morale in this study.

The belief that written material should be encoded at the employees level seems to be widely accepted. However, Colby and Tiffin (1950) point out that little if anything is done to determine the reading level of employees. In order to avoid this problem, they administered the Nelson Silent Reading Test and correlated these scores with age and years of schooling. This information can subsequently be used to predict the reading level of an individual or a group. By coupling this information with information obtained from readibility tests, one could be fairly confident written material was not too difficult nor too easy for a given audience. Of course, anyone employing this method should use more recent measures. The most serious limitation of this approach is the time factor (time required to master the techniques and to obtain the data). However, increased effectiveness in communication should easily outweigh this disadvantage.

Another way of analyzing communication is to record the communication activities of a person and compare this information with what he thinks he does. One way to obtain data of this nature is to "shadow" (follow the person through his daily routine) an executive and record

his activities. However, this is time consuming and quite cumbersome.

In order to avoid this problem, Burns (1954) utilized a self recording method to obtain information about communication activities of executives. In essence, the executive records the length of time an interaction lasts, who was involved, what the subject of discussion was, and who initiated the encounter. These categories were developed by the researcher and the participating executives. After deciding on appropriate categories, each executive recorded his activities for thirteen weeks. According to Burns, little problem was encountered in recording or analysis. Through the use of this method, information concerning direction of communication and the amount of time spent in various types of activities was gathered. Some of the conclusions were that lateral communication was engaged in as much as downward or upward communication, downward communication was much more prevalent than upward communication, status was a deterant to upward communication, and executives inaccurately estimated how others spend their time.

The method seems promising but a number of problems were not adequately dealt with. For example, the recorders may have been quite reluctant to report personal matters handled on the job (time spent talking to the wife, etc.). Mobility and trust factors may well have distorted information one received in this analysis.

Most of the techniques discussed thus far were concerned with analyzing downward communication. Read (1962) provides a means of assessing upward communication. Upward communication was measured by determining the amount of agreement between pairs of supervisors and subordinate. This was determined by asking both members of a pair to rank order the degree of difficulty (from the subordinates' point of view)

in five different areas (coordination and communication, budget and costs, pressures and deadlines, technical problems, and administration and supervision). The resulting measure was taken to be a good indication of the accuracy of upward communication. Further analysis indicated fairly high correlations between accuracy and trust. Low trust and low accuracy went hand in hand. There is also some tendency (especially for upwardly mobile subordinates) toward lower accuracy when the subordinate perceives the superior as having a great deal of influence over his professional advancement.

Certainly studies of the nature described by Read would be valuable. One of the shortcomings of this and other methods is the amount of time required to gather the data. ECCO (Episodic Communication Channels in Organization) analysis, however, provides a fast way of collecting a large amount of data. The basic procedure is to present a short questionnaire (estimated to take two minutes) to all subjects (management personnel for example) asking them to indicate how and from whom they had received a piece of information. It is then possible to analyze, upward, downward, lateral, and informal communication networks. Davis (1953) provides a number of formulaes for analysis that might be useful to someone interested in this approach. The method could be quite difficult to use in large organizations (the organization has to be small enough so that subjects know one another by name). The method is also limited to analyzing the dissemination of new information.

In yet another direction, Pace and Simons felt ". . . the ability to identify effective communication in potential or working supervisory or sales personnel would be an asset to most personnel managers (Pace and

Simons, 1963, p. 191)." They utilized an open-ended form to rate interviewees for communicative ability. In order to determine the validity of the Purdue Basic Oral Communication Form, Pace and Simons utilized the form to aid in discriminating between "successful" and "less successful" managers and salesmen. In general, they were fairly accurate. Some of the shortcomings of the device may be the lengthy interviews used (2½ hours in this case) and the fact that people using the form were fairly sophisticated investigators. In otherwords, can one with a meager speech background be as successful?

Odiorne (1954) developed a sixteen item form to be used in diagnosing communication problems in organizations. The "communication audit" utilized was an adaptation of a form developed by the National Society of Professional Engineers. The procedure is relatively straight-forward. One gives the form to employees asking them to respond from their point of view and to management asking them to respond from the employees' point of view. A comparison of the two sets of data should reveal major misunderstandings.

Some difficulty might be encountered in validating the obtained data and in using a "predetermined" set of questions. However, it would be advantageous in that the same form may be used in a wide variety of organizations.

Another way of studying organizations has been to focus on small, artifical, laboratory designed organizations. A major portion of the study done in the area rests on Bavelas' mathematical model. The basic assumptions of the model are:

"1. The space being dealt with consists of collections of cells.

2. A cell is equivalent to a point or a position in the space.

3. A given cell may or may not be touching another cell.

4. If a cell A_I is touching cell A_2, then cell A_2 is said to be touching cell A_I.

5. A cell cannot touch itself (Bavelas, 1948, p. 18)."

From these basic assumptions, Bavelas derived mathematical formulas applicable to various aspects of group structure. For example, one can quantify the number of links in a communication network or the distance between one communicator and another in terms of the number of links separating them. Subsequently, investigators have applied the model to the structure of communication networks. Heise and Miller (1951) utilized four experimental networks (circle, chain, y, and wheel) in his investigation of the relative capabilities of these networks in solving simple tasks. Cohen and Bennis (1961) investigated the effects of experience in wheel and circle networks. These investigators and others (see Shaw, 1954, 1955, 1956; Cohen, 1958) have examined communication networks utilizing the Bavelas' model.

Some other information has been produced concerning communication networks that doesn't rely as heavily on Bavelas. Back, et.al., (1950) set forth a method of studying rumor transmission in a system. Basically, this consists of holding post rumor interviews and by utilizing participant observations (select individuals who know about the rumor before hand and have them record who tells them and when). By analyzing the data thus collected, it is possible to describe the paths the rumor followed. Dodd and Winthrop (1953) set forth a diffussion theory based on six factors -- 1. actors 2. reactors 3. their acts 4. the timing 5. spacing 6. other factor conditions. They feel that

by applying mathematical concepts to the theory one should be able to predict the spread of "novel" behavior in an organization.

Erbe (1962) studied the effects of gregariousness and integration (established by personality inventories and sociograms) on the flow of information by measuring the amount of information held by gregarious vs. non-gregarious and integrated vs. non-integrated graduate students.

One other suggested approach to the investigation of communication networks should be mentioned that of power distance. Mulder (1959) suggests it might be valuable to look at behavior in a network in terms of the attempts to increase or decrease the psychological distance between the less powerful and more powerful members.

A number of ways of analyzing communication variables in organization have been examined. The methods reviewed provide ways of analyzing information retention, downward communication, upward communication, readibility, and communicative potential.

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